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Zürich, 31 March 2011

**Comment on NTIA Notice of Inquiry regarding the IANA procurement process 2011  
[Docket No. 110207099-1099-01] RIN 0660-XA23<sup>1</sup>.**

This response is a joint effort by the Swiss Federal Office of Communications (OFCOM) and the Swiss foundation SWITCH, registry and registrar for Top Level Domain name CH, the ISO 3166-1 code for Confoederatio Helvetica. The Swiss Federal Office of Communications has licensed SWITCH in 2003 to perform both registry and registrar functions for CH and is supervising its performance closely since then. SWITCH is managing CH since 20 May 1987 and has, inter alia, gained vast knowledge regarding the Internet Domain Name System. Its response is therefore based on answers by an epistemic community as well as on practical experience and cooperation with the IANA function over a period of nearly 25 years. SWITCH has also commented on the NTIA inquiry on the expiration of the Joint Project Agreement (JPA) with the Internet Corporation for Assigned Names and Numbers (ICANN), docket No. 090420688-9689-01, on 2 June 2009.

Both institutions follow developments in the Internet and its governance continuously and OFCOM is a long time member of ICANN's Governmental Advisory Committee (GAC). Switzerland has been deeply committed to the Internet governance processes since their beginning, strongly supporting the principles expressed by the World Summit on the Information Society (WSIS) that the international management of the Internet should be

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<sup>1</sup> Request for Comments on the Internet Assigned Numbers Authority (IANA) Functions, 25 February 2011, URL [http://www.ntia.doc.gov/frnotices/2011/fr\\_ianafunctionsnoi\\_02252011.pdf](http://www.ntia.doc.gov/frnotices/2011/fr_ianafunctionsnoi_02252011.pdf), for comments see <http://www.ntia.doc.gov/comments/110207099-1099-01/>.

multilateral, transparent and democratic, with the full involvement of governments, the private sector, civil society and international organizations.

We are also aware of the important contributions from many sectors in the US to the development of the global Internet and very much appreciate these efforts. In this context we would like to thank the National Telecommunications and Information Administration for the opportunity to comment on the IANA procurement process.

Our response will be sent by e-mail to [IANAFunctions@ntia.doc.gov](mailto:IANAFunctions@ntia.doc.gov) and as hard copy by postal mail, including a three and one-half inch diskette containing files in doc, docx and PDF formats, to NTIA's postal address as given in the header.

Question 1. The IANA functions have been viewed historically as a set of interdependent technical functions and accordingly performed together by a single entity. In light of technology changes and market developments, should the IANA functions continue to be treated as interdependent? For example, does the coordination of the assignment of technical protocol parameters need to be done by the same entity that administers certain responsibilities associated with root zone management? Please provide specific information to support why or why not, taking into account security and stability issues.

Answer: The IANA **activities** can and should be unbundled and assigned to different and perfectly suitable entities ("distributed IANA"). Regarding activities we differentiate between

- a) protocol and RFC Editor etc. activities,
- b) DNS activities comprising management of the authoritative "legacy" non-infrastructural DNS root zone, infrastructural TLD's and the management of root zone name servers and
- c) management of IP addresses and Autonomous System Numbers (ASN).

These basically operational and executive activities should be purely administrative, relying entirely on policies and compliance procedures defined by three different legislative bodies. Additionally we introduce two supervisory or oversight structures that are not concerned with policy aspects.

In this paragraph we therefore address three different **functions** belonging to each activity:

- i. Legislative, also known as governance function,
- ii. Executive, also known as administrative-operational function and
- iii. Oversight function, the latter designating a function describing service level agreements, procurement policies, economic details etc.

To each of the three distinct IANA activities (a, b, c) it is specified which function is performed by whom:

- (1) The coordination of the assignment of technical Internet protocol parameters and Internet RFC Editor activities should be supervised by a new and specialized organization under the auspices of the Internet Society (ISOC). Legislative (or governance) functions for these activities should be by consensus of all concerned relevant stakeholders, e. g. W3C, ITU-T, IETF, IAB, ISO, ETSI etc.
- (2) The administration of certain responsibilities associated with Internet DNS root zone management and other services related to the management of the ARPA and INT top-

level domains: We regard the management of the DNS as a two tier process. The executive side currently maintained by the IANA as a purchase order of the Department of Commerce and the legislative side currently performed by ICANN as joint project with the US DoC. We would consider it unfortunate, if both functions would remain under one single chain of supervision (US DoC – NTIA – ICANN), the functions are different and this should be reflected in the organizational structure. We recommend outsourcing the executive/administrative side to an economically stable and efficient organization, run by experts and supervised by a combination of several governmental authorities recognized and legitimized by the global internet community. The DNS activities can be globally tendered and defined by a service level contract or agreement between the IANA contractor and the supervising entity.

Since ccTLD registries are mostly concerned with this IANA function, we thus would recommend this function to remain under purchase order by such governmental authority, because the IANA as an executive activity requires strong and efficient backing and clearly defined governmental responsibility.

The legislative side of the DNS activities can be organized as outlined in our answer to question 2 below.

- (3) The allocation of Internet numbering resources and ASN's should remain as currently established: Governance by bottom-up guidelines from the regional communities to the respective Regional Internet Registry, RIR (in Europe RIPE-NCC), and top-down via ICANN → ASO → NRO. The executive functions should remain to be carried out by the well established current regional Internet registries for the management of Internet numbering resources, RIR's. The IANA part is recommended to be supervised by the same new and specialized organization under the auspices of the Internet Society (ISOC) as outlined in (1) above.

The three main reasons for the unbundling proposal are:

- I. Different economic foundations of the three distinct parts as outlined above in a) to c) above. Root zone management and the allocation of numbering resources can be made financially self-contained; there is no need for financial support from sponsors or donors. The other parts will rely on external financial contributions.
- II. Risks and different liability threats. Particularly the current Internet DNS root zone management IANA function is a potential single point of failure, we should strive for redundancy and for high availability systems with short answering times. Particularly in light of the hundreds of new TLD's proposed, the current Internet DNS root zone management IANA function becomes highly exposed to litigation and liability threats.
- III. Different know-how and interaction. The three areas described require different human resources with different skills to perform the jobs. In addition, there are different stakeholders involved and the three policy bodies as described require separate liaison and interaction.

Question 2. The performance of the IANA functions often relies upon the policies and procedures developed by a variety of entities within the Internet technical community such as the IETF, the RIRs and ccTLD operators. Should the IANA functions contract include references to these entities, the policies they develop and instructions that the contractor

follow the policies? Please provide specific information as to why or why not. If yes, please provide language you believe accurately captures these relationships.

Answer: Current policy statements for ccTLD delegations are found in: RFC-1591, ICP-1, GAC Principles 2000 and 2005, IANA News memoranda and IANA internal policies and procedures. From this it is obvious that until now at least three different agencies have issued IANA policy statements: The IETF, ICANN/IANA and the governments assembled in ICANN's Governmental Advisory Committee. It has been noted, however, that particularly for ccTLD's there are discrepancies between the policy statements issued and the actual processes the IANA function is adhering to<sup>2</sup>. Since the RIR's develop their policies both bottom-up with their regional Internet communities (regional policies) and top-down via ICANN → ASO → NRO (global policies), only gTLD and sTLD policies appear to be currently unilaterally controlled by ICANN, essentially by means of PDP's developed in the GNSO and finally in bilateral agreements between ICANN and a TLD contracting party.

In order to preserve this diversity - which we recommend - it is suggested to conduct these processes more transparent and to ensure that only one process chain is responsible to shape the IANA's functions policy in the two distinctive areas described. For ccTLD's, as an example, it is recommended that solely ICANN together with its GAC formulate policies. For further details on the governmental involvement see our answer to question 3 below.

The different organizations involved in policy development for the IANA function should be separately labeled in a future IANA functions contract and their mandate and mission clearly defined.

Basically, every policy published to defined IANA processes need to base on a strong consensus on fundamental values of transparency, accountability, predictability and legitimacy, taking into account already established bodies and procedures.

Question 3. Cognizant of concerns previously raised by some governments and ccTLD operators and the need to ensure the stability and security of the DNS, are there changes that could be made to how root zone management requests for ccTLDs are processed? Please provide specific information as to why or why not. If yes, please provide specific suggestions.

Answer: It is in our view essential that ICANN and IANA recognize and apply the GAC Principles and guidelines for the delegation and administration of country code Top Level Domains and act accordingly. These principles are also valid for IDN ccTLDs.

Delegation and re-delegation are national issues and should be resolved nationally and in accordance with national laws, taking into account the views of all local stakeholders and the rights of the existing ccTLD Registry. Once a final formal decision has been reached, ICANN

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<sup>2</sup> ccNSO Delegation and Redelelegation Working Group Final Report (DRD WG), URL <http://ccnso.icann.org/node/22607/metadata> (24.3.2011), where the WG notes a "hight degree of variability in applying the rules" and in particular see para. 4: Recommendations, where the ICANN-ccNSO DRD WG states that "the decisions of the ICANN board should be logical and predictable" and, "as a first step, the ccNSO Council should undertake the development of a "Framework of Interpretation" [of the currently known policies] for the delegation of ccTLD's".

should act promptly to initiate the process of delegation or re-delegation in line with authoritative instructions showing the basis for the decision.

We also would like to reference the GAC Principles, Para 7.1<sup>3</sup>: “Delegation and re-delegation is a national issue and should be resolved nationally and in accordance with national laws, taking into account the views of all local stakeholders and the rights of the existing ccTLD registry” and US NTIA statement of 30 June 2005 “US Principles on the Internet’s Domain Name and Addressing System”: [...] “Governments have legitimate interest in the management of their country code top level domains (ccTLD). The United States recognizes that governments have legitimate public policy and sovereignty concerns with respect to the management of their ccTLD” [...].

For ccTLD’s, the bodies currently involved are:

- a) The ISO 3166-1 country code Maintenance Agency<sup>4</sup>.
- b) IANA function operator, responsible for the overall management of the management system of the IANA TLD database.
- c) US DoC, responsible for overseeing any changes that are made to the root zone file. Therefore, all such changes need to be approved by the US DoC. The NTIA is the office within the US DoC dealing with these matters, also known as Administrator.
- d) Master Root Zone Maintainer, responsible for publishing and administering the root zone file. Any changes to the root zone file need to be sent to Master Root Zone Maintainer to be validated and published in the zone file. VeriSign Inc. is the current operator of the authoritative “legacy” Master Root, under a cooperative agreement<sup>5</sup> with the US DoC.
- e) A TLD Manager recognized by IANA, also known as the existing or new operator. The TLD Manager is usually a corporation or incorporated organization which is responsible for the overall management of the TLD. The Administrative Contact of the TLD manager is responsible for the administrative aspects of the TLD and the Technical Contact is responsible for the technical aspects of the TLD such as maintaining the name servers for the TLD.
- f) Local Internet Community (LIC) or national government or other public authority, also known as sponsoring organization. A TLD manager usually operates under more or less formal supervision of either one.

Current policies for ccTLD registries are derived from

- 1) LIC, national government and its departments or other public authority.
- 2) Other national and global legal bodies like WIPO and various organizations bestowed with policing functions.
- 3) ICANN, specifically from its ccNSO but not limited to it.
- 4) Technical and administrative bodies like IETF, ITU, ISO etc.

One of the positive features of the current system for ccTLD registries is its diversity of influences and governmental structures. It may not be particularly efficient, but it ensures a significant level of flexibility, innovation, stability and democracy. The difference to the current structure would be the “distributed IANA” function as outlined in answers 1 and 2 above.

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<sup>3</sup> URL [http://gac.icann.org/system/files/ccTLD\\_Principles\\_0.pdf](http://gac.icann.org/system/files/ccTLD_Principles_0.pdf), 26.3.2011.

<sup>4</sup> ISO 3166/MA, c/o International Organization for Standardization, CH-1211 Geneva 20.

<sup>5</sup> URL <http://www.ntia.doc.gov/ntiahome/domainname/nsi.htm>, 26.3.2011.

For gTLD's the situation is more streamlined. Main actors are b) to e) as above and policies are derived from ICANN, mainly its GNSO, WIPO, Law Enforcement Agencies and technical and administrative bodies as stated in 4) above. Although we are not directly involved in gTLD matter we recommend keeping this proven system despite the fact that it turned out also not being really fast and efficient.

Question 4. Broad performance metrics and reporting are currently required under the contract. Are the current metrics and reporting requirements sufficient? Please provide specific information as to why or why not. If not, what specific changes should be made?

Answer: According to the IANA functions contract<sup>6</sup>, appendices A and B specify processing metrics and monthly performance progress report tables. While we regard monthly performance progress report tables submitted to the NTIA as most comprehensive and sufficient, the times specified in the "process for IANA root management requests" could not have – according to our knowledge and what is reported about IDN applications to the root zone – been met in every case over the years<sup>7</sup>. The specific steps and timeouts outlined in this August 2006 document should probably be reviewed in cooperation with the operators of the IANA function before specifying them again in a new contract.

Question 5. Can process improvements or performance enhancements be made to the IANA functions contract to better reflect the needs of users of the IANA functions to improve the overall customer experience? Should mechanisms be employed to provide formalized user input and/or feedback, outreach and coordination with the users of the IANA functions? Is additional information related to the performance and administration of the IANA functions needed in the interest of more transparency? Please provide specific information as to why or why not. If yes, please provide specific suggestions.

Answer: Transparency is often defined as "easily seen through or understood"<sup>8</sup>. Below our specific suggestions on this topic:

- a) With regard to procedural transparency we recommend at first to clearly define and follow the rules the IANA function is required to abide by. The DRD WG of the ccNSO noted a "failure to consistently follow established policy development processes and procedures", a "lack of predictability" and a "high degree of variability" in both ICANN's Board and in the IANA function<sup>9</sup>. Only when this is corrected we can define the transparency processes in more detail. In the same category we recommend to closely look at how and what for available budgetary and human resources are used. The ccTLD registries have over the years continuously requested to be provided with more information about the costs of the IANA function. We also recommend enhancing the accountability of the IANA function, including statements of the obligation of IANA with regard to its accountees.

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<sup>6</sup> URL [http://www.ntia.doc.gov/ntiahome/domainname/iana/ianacontract\\_081406.pdf](http://www.ntia.doc.gov/ntiahome/domainname/iana/ianacontract_081406.pdf), 26.3.2011.

<sup>7</sup> See the ICANN dashboard for recent IANA reports, URL <https://charts.icann.org/public/index-iana-main.html>, 26.3.2011.

<sup>8</sup> Oxford Dictionary, see keyword "transparency".

<sup>9</sup> ccNSO DRD WG, op cit, para. 3, p. 17.

- b) Decision-making transparency: We suggest clearly reasoned explanations for all decisions taken and the inclusion of ICANN PDP's or other public scrutiny. All decisions should be made taking due account of global public interest.
- c) With regard to substantive transparency we would like to see fairness, efficiency, public interest and rationality in decisions and processes. It should be further noted, that transparency is a necessary requirement for exercising the IANA functions in the global public interest. Another requirement is accountability to the global public.

Question 6. Should additional security considerations and/or enhancements be factored into requirements for the performance of the IANA functions? Please provide specific information as to why or why not. If additional security considerations should be included, please provide specific suggestions.

Answer: All changes to TLD entries in IANA's database must be very carefully implemented. The main objective is utmost security. We therefore prefer security over speed. Open and not encrypted communication with both admin- and tech-contact is adequate, as long as no such changes are requested by the majority of registries. In addition, we recommend the IANA issuing annual reminders to the admin- and tech-contact to check and update their entries and to study improved authentication mechanisms, such as digitally signed communication between the IANA and the requestor and the mandatory use of certificates.

We also would like to see more "downstream" communication from the IANA function, perhaps by reinstalling IANA News Memoranda. Only seven such Memos have been sent between April 2000 (Memo No. 1) and February 2003 (Memo No. 7). These memoranda are a great opportunity to communicate progress and changes.

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